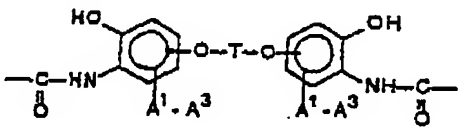
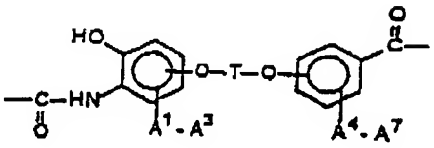
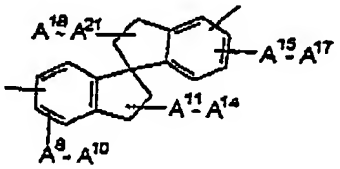
CLAIM AMENDMENTS

Claim 1 (original). A polybenzoxazole precursor comprising a partial structure selected from the group consisting of

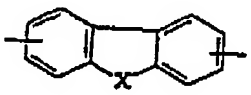
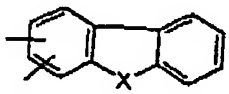
3  and  4

wherein each of A^1 to A^7 is a univalent substituent independently selected from the group consisting of H, F, CH_3, CF_3, OCH_3 and OCF_3;

T is a residue selected from the group consisting of

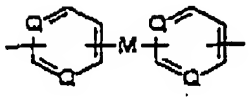
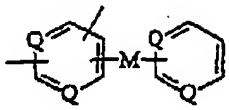
5 

wherein each of A^8 to A^{21} is a univalent substituent independently selected from the group consisting of H, F, CH_3, CF_3, OCH_3 and OCF_3;

6  or  7

wherein X is selected from the group consisting of $-CH_2-$, $-CF_2-$, $-C(CH_3)_2-$, $-C(CF_3)_2-$, $-C(OCH_3)_2-$, $-C(OCF_3)_2-$, -

$C(CH_3)(C_6H_5)-$, $-C(C_6H_5)_2-$, $-O-$, $-(NH)-$, $-(N-CH_3)-$ and $-(N-C_6H_5)-$;

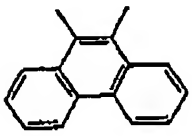
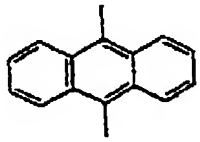
8  or  9

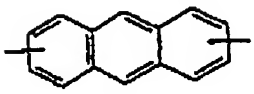
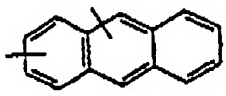
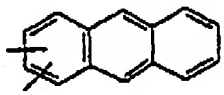
wherein M is selected from the group consisting of residues represented by formulas 10-14

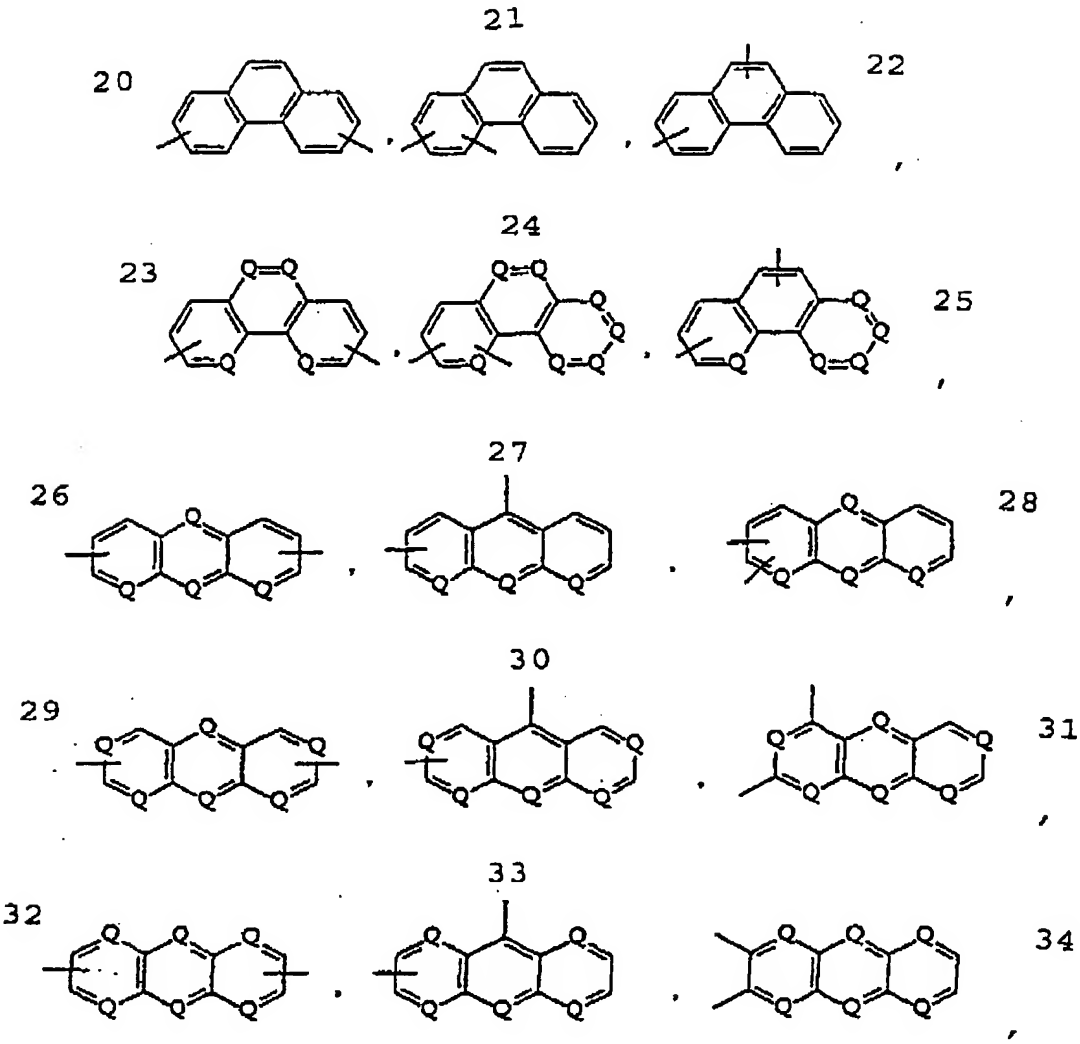
10  11  12  13  or  14

in which Q is selected from the group consisting of C-H, C-F, $C-CH_3$, $C-CF_3$, $C-OCH_3$, $C-OCF_3$ and N,

and residues represented by formulas 15-34 shown below:

15   16

17  18   19



wherein Q is defined as above, provided that at least one Q signifies N and a maximum of two N atoms are present per ring.

Claim 2 (original). The polybenzoxazole precursor of claim 1, further comprising at least one acetylene group.

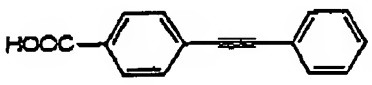
Claim 3 (original). The polybenzoxazole precursor of claim 2, wherein said acetylene group is present in the main chain.

Claim 4 (original). The polybenzoxazole precursor of claim 2, wherein said acetylene group is present in a side chain.

Claim 5 (original). The polybenzoxazole precursor of claim 2, wherein said acetylene group is present in a chain terminating group.

Claim 6 (original). The polybenzoxazole precursor of claim 2, wherein said acetylene group is present in the residue of a carboxylic acid selected from the group consisting of

35 

, 

36 ,

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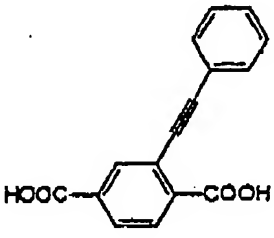
and 

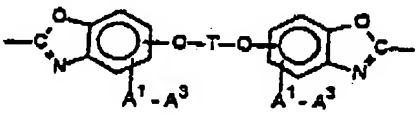
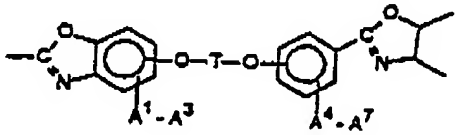
38 .

Claim 7 (original). A photoresist solution, comprising a polybenzoxazole precursor of claim 1, a diazoketone photoactive component, and an organic solvent.

Claim 8 (original). The photoresist solution of claim 7, wherein the weight ratio of polybenzoxazole precursor to diazoketone is in the range from 1:20 to 20:1.

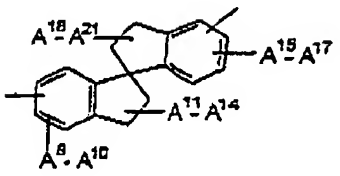
Claim 9 (original). The photoresist solution of claim 8, wherein a weight ratio of polybenzoxazole precursor to diazoketone is in a range from 1:10 to 10:1

Claim 10 (currently amended). A polybenzoxazole containing a partial structure selected from the group consisting of

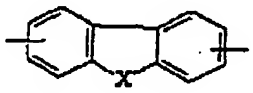
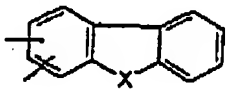
49   50

wherein each of A^1 to A^7 is a univalent substituent independently selected from the group consisting of H, F, CH_3, CF_3, OCH_3 and OCF_3; and

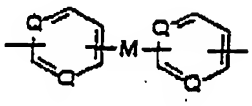
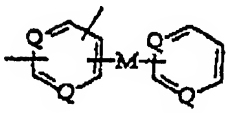
T is a residue selected from the group consisting of the residues represented by the following formulas ~~5-34 defined above~~

5 

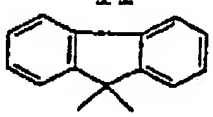
wherein each of A^8 to A^{21} is a univalent substituent independently selected from the group consisting of H, F, CH_3, CF_3, OCH_3 and OCF_3;

6  or  7

wherein X is selected from the group consisting of $-CH_2-$, $-CF_2-$, $-C(CH_3)_2-$, $-C(CF_3)_2-$, $-C(OCH_3)_2-$, $-C(OCF_3)_2-$, $-C(CH_3)(C_6H_5)-$, $-C(C_6H_5)_2-$, -O-, -(NH)-, $-(N-CH_3)-$ and $-(N-C_6H_5)-$;

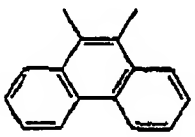
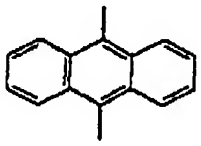
8  or  9

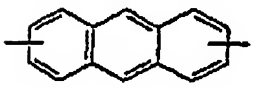
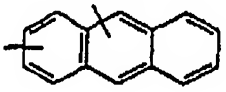
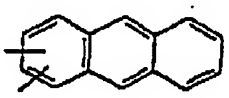
wherein M is selected from the group consisting of residues represented by formulas 10-14

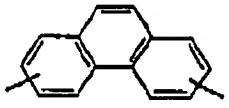
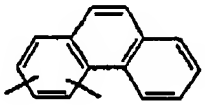
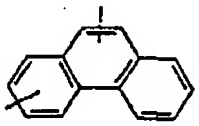
10  11  12  13  or  14

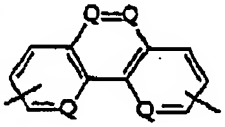
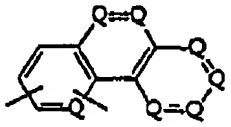
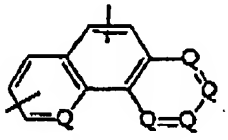
in which Q is selected from the group consisting of C-H, C-F, $C-CH_3$, $C-CF_3$, $C-OCH_3$, $C-OCF_3$ and N,

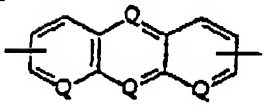
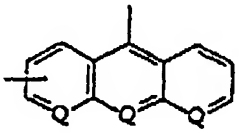
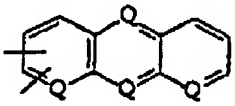
and residues represented by formulas 15-34 shown below:

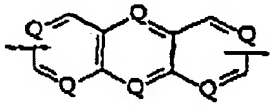
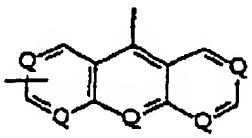
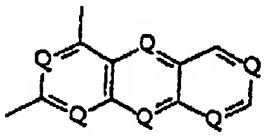
15   16

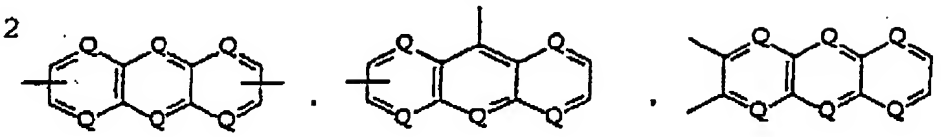
17  18   19

20  21   22

23  24   25

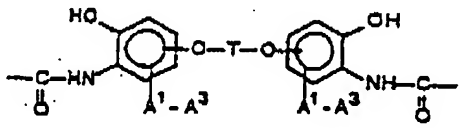
26  27   28

29  30   31

32  34

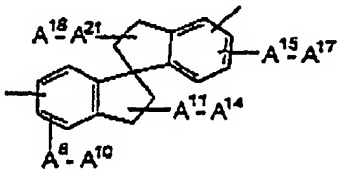
wherein Q is defined as above, provided that at least one Q signifies N and a maximum of two N atoms are present per ring.

Claim 11 (currently amended). The polybenzoxazole precursor of claim 1, wherein said partial structure is

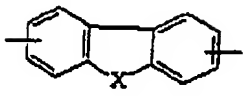
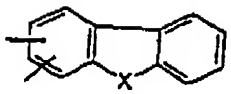
3 

wherein each of A^1 to A^3 is a univalent substituent independently selected from the group consisting of H, F, CH_3, CF_3, OCH_3 and OCF_3; and

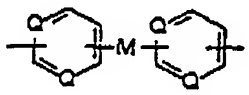
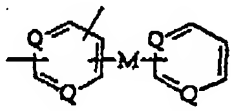
T is a residue selected from the group consisting of the residues represented by the following formulas ~~5-34 defined above~~

5 

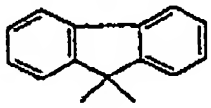
wherein each of A^8 to A^{21} is a univalent substituent independently selected from the group consisting of H, F, CH_3, CF_3, OCH_3 and OCF_3;

6  or  7

wherein X is selected from the group consisting of $-CH_2-$, $-CF_2-$, $-C(CH_3)_2-$, $-C(CF_3)_2-$, $-C(OCH_3)_2-$, $-C(OCF_3)_2-$, $-C(CH_3)(C_6H_5)-$, $-C(C_6H_5)_2-$, $-O-$, $-(NH)-$, $-(N-CH_3)-$ and $-(N-C_6H_5)-$;

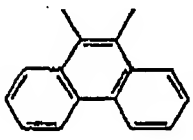
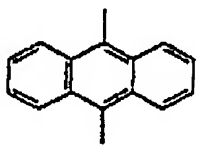
8  or  9

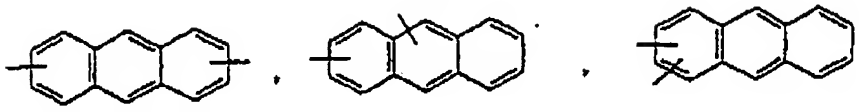
wherein M is selected from the group consisting of residues represented by formulas 10-14

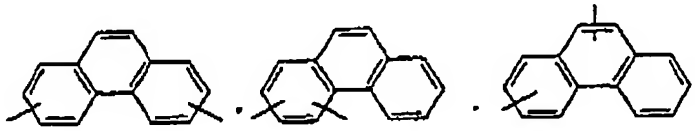
10  11  12  13  or  14

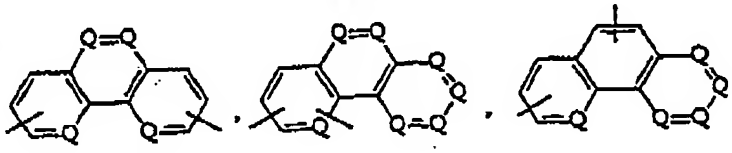
in which Q is selected from the group consisting of C-H, C-F, $C-CH_3$, $C-CF_3$, $C-OCH_3$, $C-OCF_3$ and N,

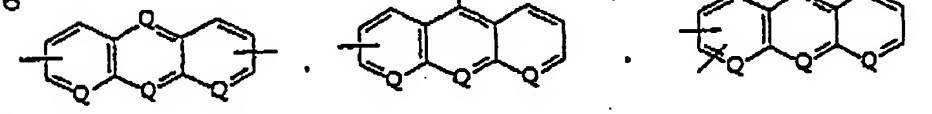
and residues represented by formulas 15-34 shown below:

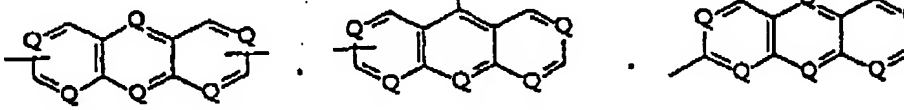
15   16

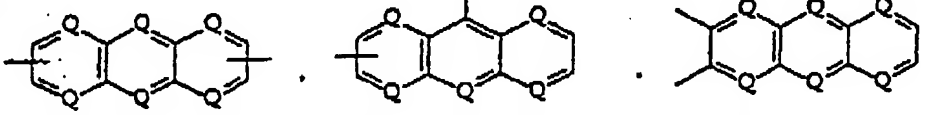
17  18 19

20  21 22

23  24 25

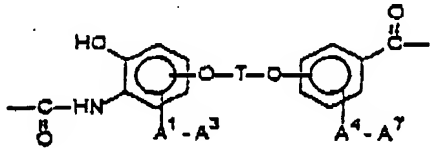
26  27 28

29  30 31

32  33 34

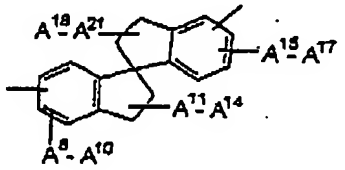
wherein Q is defined as above, provided that at least one Q signifies N and a maximum of two N atoms are present per ring.

Claim 12 (currently amended). The polybenzoxazole precursor of claim 1, wherein said partial structure is

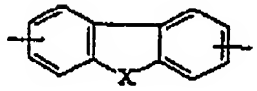
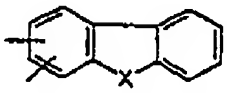
4 

wherein each of A^1 to A^7 is a univalent substituent independently selected from the group consisting of H, F, CH_3, CF_3, OCH_3 and OCF_3; and

T is a residue selected from the group consisting of the residues represented by the following formulas ~~5-34 defined above~~

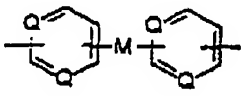
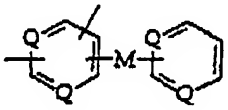
5 

wherein each of A^8 to A^{21} is a univalent substituent independently selected from the group consisting of H, F, CH_3, CF_3, OCH_3 and OCF_3;

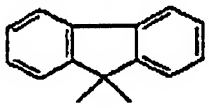
6  or  7

wherein X is selected from the group consisting of $-CH_2-$, $-CF_2-$, $-C(CH_3)_2-$, $-C(CF_3)_2-$, $-C(OCH_3)_2-$, $-C(OCF_3)_2-$, -

$C(CH_3)(C_6H_5)-$, $-C(C_6H_5)_2-$, $-O-$, $-(NH)-$, $-(N-CH_3)-$ and $-(N-C_6H_5)-$;

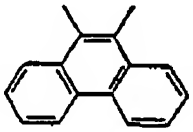
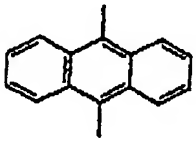
8  or  9

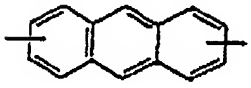
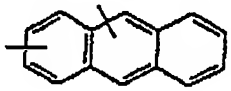
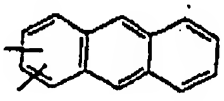
wherein M is selected from the group consisting of residues represented by formulas 10-14

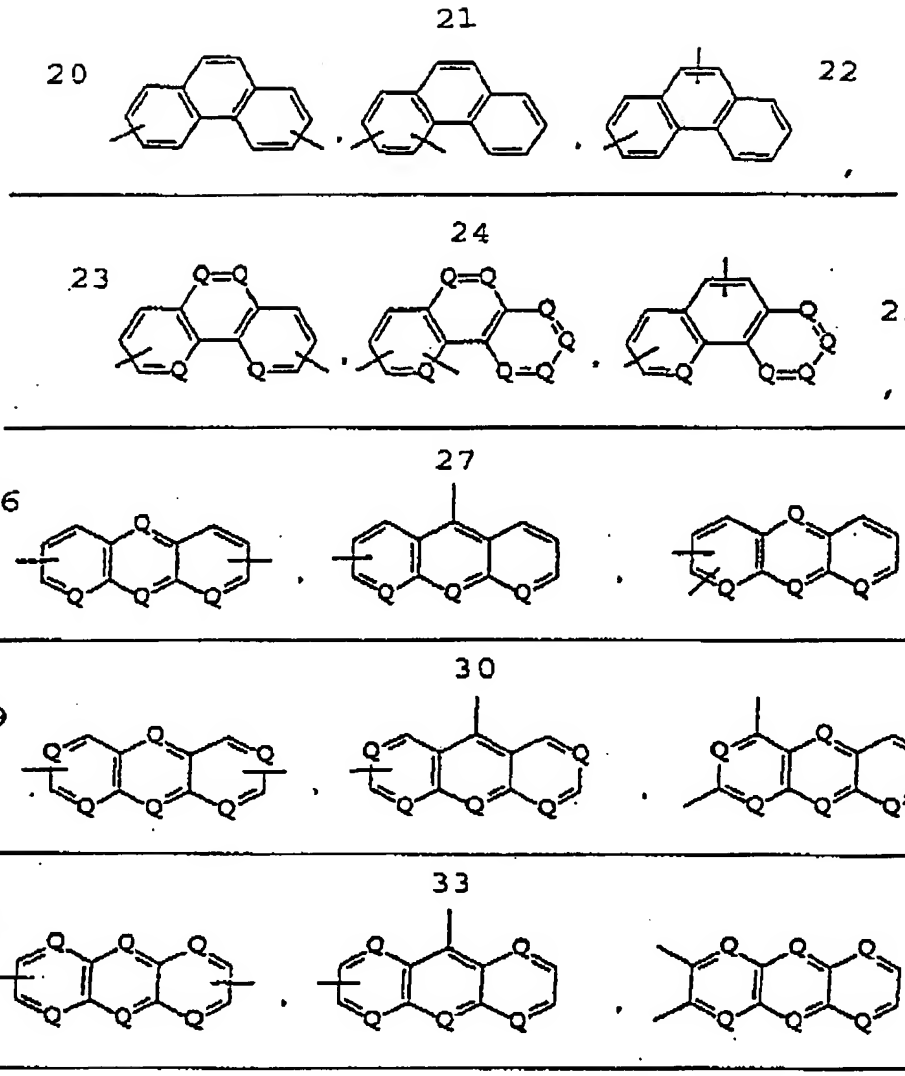
10  11  12  13  or  14

in which Q is selected from the group consisting of C-H, C-F, $C-CH_3$, $C-CF_3$, $C-OCH_3$, $C-OCF_3$ and N,

and residues represented by formulas 15-34 shown below:

15   16

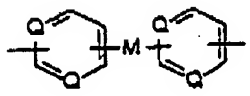
17  18   19



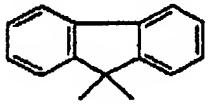
wherein Q is defined as above, provided that at least one Q signifies N and a maximum of two N atoms are present per ring.

Claim 13 (original). The polybenzoxazole precursor of claim 1, wherein each of A^1 to A^7 is H.

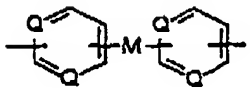
Claim 14 (original). The polybenzoxazole precursor of claim 1, wherein T is

8 

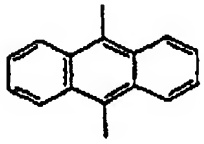
in which each Q is CH and M is

11 

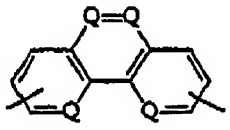
Claim 15 (original). The polybenzoxazole precursor of claim 1, wherein T is

8 

in which each Q is CH and M is

16 

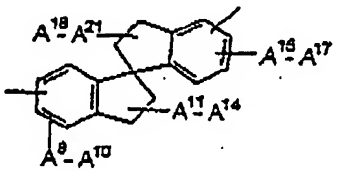
Claim 16 (original). The polybenzoxazole precursor of claim 1, wherein T is

23 

in which Q in each outside ring is N and each Q in the middle ring is CH.

Claim 17 (original). The polybenzoxazole precursor of claim 1, wherein T is

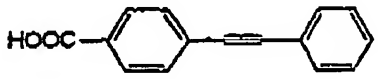
5



in which six of the substituents A^8 to A^{21} are CH_3 and the remainder of the substituents A^8 to A^{21} are H.

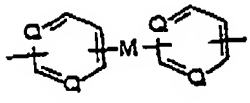
Claim 18 (original). The polybenzoxazole precursor of claim 5, wherein said chain terminating group is a residue of

36



Claim 19 (original). The polybenzoxazole precursor of claim 18, wherein T is

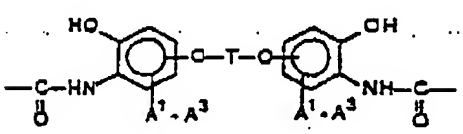
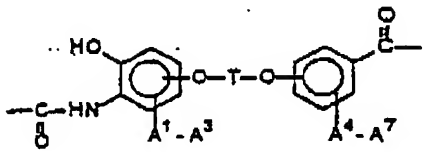
8



in which each Q is CH and M is

11 

Claim 20 (original). A process for preparing a polybenzoxazole precursor containing a partial structure selected from the group consisting of

3  and  4

wherein each of A^1 to A^7 and T are as defined above, comprising the steps of

providing at least one reactant selected from the group consisting of bis-o-aminophenols and o-aminophenolcarboxylic acids,

causing the reactant to react with at least one dicarboxylic acid compound,

mixing the reaction mixture with a precipitating agent to precipitate a solid polybenzoxazole precursor,

and isolating the polybenzoxazole precursor from the reaction mixture.